AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (cancelled)

2. (currently amended) The method of claim ~~1~~ 57 wherein said at least one flow control device includes one of a capillary tube device and an orifice device.

3. (cancelled)

4. (currently amended) The method of claim 57 ~~1~~ wherein said outputting includes ~~step of selecting a flow control device includes~~ generating a list of ~~available~~ flow control devices ~~based on said output~~ and ~~selecting~~ said method further comprises receiving a selection of a flow control device from said list of ~~available~~ flow control devices.

5. (currently amended) The method of claim 57 ~~1~~ further comprising receiving ~~inputting~~ properties for a refrigerant flowing through said cooling system, wherein said configuring includes configuring said model according to ~~output is further based on~~ said refrigerant properties.

6. (previously presented) The method of claim 5 wherein said properties include refrigerant charge and one of refrigerant superheat temperature and refrigerant sub-cooling temperature.

7. (currently amended) The method of claim 57 further comprising ~~1 wherein said step of inputting condenser parameters includes~~ generating a list of ~~available~~ condensers, receiving ~~selecting~~ a selected condenser from said list of ~~available~~ condensers and automatically inputting said condenser parameters based on said selected condenser.

8. (currently amended) The method of claim 57 further comprising ~~1 wherein said step of inputting compressor parameters includes~~ generating a list of ~~available~~ compressors based on search parameters, ~~selecting~~ receiving a selected compressor from said list of ~~available~~ compressors and automatically inputting said compressor parameters based on said selected compressor.

9. (previously presented) The method of claim 8 wherein said search parameters include at least one of a model number, a voltage, a phase, a frequency, a refrigerant type, an application type and a capacity.

10. (previously presented) The method of claim 8 wherein said search parameters include a capacity and a capacity tolerance.

11. (currently amended) The method of claim ~~1~~ 57 further comprising receiving ~~inputting~~ tubing and line heat transfer parameters, wherein said configuring includes configuring said model according to ~~output is further based on~~ said tubing and line heat transfer parameters.

12. (currently amended) The method of claim 57 ~~1~~ further comprising receiving ~~inputting~~ accumulator parameters, wherein said configuring includes configuring said model according to ~~output is further based on~~ said accumulator parameters.

13. (currently amended) The method of claim ~~1~~ 57 wherein said condenser parameters and said compressor parameters are inputted ~~input~~ as air-cooled condensing unit parameters.

14. (currently amended) The method of claim 13 further comprising generating a list of ~~available~~ air-cooled condensing units, receiving a selected ~~selecting an~~ air-cooled condensing unit from said list of ~~available~~ air-cooled condensing units and automatically inputting said air-cooled condensing unit parameters based on said selected air-cooled condensing unit.

15. (cancelled)

16. (currently amended) The method of claim 43 further comprising generating a list of ~~available~~ condensing units, selecting a condensing unit from said list of ~~available~~ condensing units and automatically inputting said condensing unit parameters based on said selected condensing unit.

17. (currently amended) The method of claim 43 wherein said condensing unit parameters include said compressor parameters and condenser parameters.

18. (previously presented) The method of claim 43 further comprising selecting a flow control device for said cooling system based on said system outputs.

19. (previously presented) The method of claim 18 wherein said flow control device includes one of a capillary tube device and an orifice device.

20. (previously presented) The method of claim 18 further comprising selecting a flow control parameter including a sub-cooling temperature and a superheat temperature.

21. (currently amended) The method of claim 18 wherein said step of selecting a flow control device includes generating a list of ~~available~~ flow control devices based on said

system outputs and selecting said flow control device from said list of ~~available~~ flow control devices.

22. (cancelled)

23. (previously presented) The method of claim 43 wherein said refrigerant properties include refrigerant charge and one of refrigerant superheat temperature and refrigerant sub-cooling temperature.

24. (previously presented) The method of claim 43 further comprising inputting tubing and line heat transfer parameters, wherein said system outputs are further based on said tubing and line heat transfer parameters.

25. (previously presented) The method of claim 43 further comprising inputting accumulator parameters, wherein said system outputs are further based on said accumulator parameters.

26. (cancelled)

27. (currently amended) The method of claim 65 ~~49~~ wherein said ~~step of~~ calculating ~~said air properties~~ includes generating an air properties table based on said dry bulb temperature.

28. (currently amended) The method of claim 65 ~~49~~ wherein said ~~step of~~ calculating ~~said air properties~~ includes generating an air properties graph based on said dry bulb temperature.

29. (currently amended) The method of claim 65 ~~49~~ further comprising selecting a flow control device based on said output.

30. (previously presented) The method of claim 29 wherein said flow control device includes one of a capillary tube device and an orifice device.

31. (previously presented) The method of claim 29 further comprising selecting a flow control parameter including a sub-cooling temperature and a superheat temperature.

32. (currently amended) The method of claim 29 wherein said step of selecting a flow control device includes generating a list of ~~available~~ flow control devices based on said output and selecting said flow control device from said list of ~~available~~ flow control devices.

33. (currently amended) The method of claim 65 ~~49~~ further comprising receiving ~~inputting~~ properties for a refrigerant flowing through said cooling system, wherein said configuring includes configuring said model according to ~~output is further based on~~ said refrigerant properties.

34. (previously presented) The method of claim 33 wherein said properties include refrigerant charge and one of refrigerant superheat temperature and refrigerant sub-cooling temperature.

35. (currently amended) The method of claim 65 ~~49~~ wherein said receiving ~~step of inputting~~ condenser parameters includes generating a list of ~~available~~ condensers, ~~selecting~~ receiving a selected condenser from said list of ~~available~~ condensers and automatically inputting said condenser parameters based on said selected condenser.

36. (currently amended) The method of claim 65 ~~49~~ wherein said receiving ~~step of inputting~~ compressor parameters includes generating a list of ~~available~~ compressors based on search parameters, ~~selecting~~ receiving a selected compressor from said list of ~~available~~ compressors and automatically inputting said compressor parameters based on said selected compressor.

37. (previously presented) The method of claim 36 wherein said search parameters include at least one of a model number, a voltage, a phase, a frequency, a refrigerant type, an application type and a capacity.

38. (previously presented) The method of claim 37 wherein said search parameters include a capacity and a capacity tolerance.

39. (currently amended) The method of claim 65 ~~49~~ further comprising receiving ~~inputting~~ tubing and line heat transfer parameters, wherein said configuring includes configuring said model according to ~~output is further based on~~ said tubing and line heat transfer parameters.

40. (currently amended) The method of claim 65 ~~49~~ further comprising receiving ~~inputting~~ accumulator parameters, wherein said configuring includes configuring said model according to ~~output is further based on~~ said accumulator parameters.

41. (currently amended) The method of claim 65 ~~49~~ wherein said condenser parameters and said compressor parameters are received ~~input~~ as air-cooled condensing unit parameters.

42. (currently amended) The method of claim 41 further comprising generating a list of ~~available~~ air-cooled condensing units, receiving a selected ~~selecting an~~ air-cooled condensing unit from said list of ~~available~~ air-cooled condensing units and automatically inputting said air-cooled condensing unit parameters based on said selected air-cooled condensing unit.

43. (currently amended) A method of computer-based simulation of a cooling system, comprising:

inputting condensing unit parameters and evaporator parameters for said cooling system, at least one of said condensing unit parameters and said evaporator

parameters including configuration information for a heat exchanger of said cooling system, said configuration information including a number of equivalent parallel refrigerant circuits information;

inputting compressor parameters for said cooling system;

inputting refrigerant properties for a refrigerant flowing through said cooling system;

processing said condensing unit parameters, said evaporator parameters, said compressor parameters and said refrigerant properties through a model of said cooling system; and

generating system outputs based on said processing.

44. (previously presented) The method of claim 43 wherein said configuration information includes tube geometry information of said heat exchanger.

45. (previously presented) The method of claim 44 wherein said tube geometry information includes at least one of: number of rows information, horizontal tube spacing information, vertical tube spacing information, number of return bends information, outside diameter of tubing information, inside diameter of tubing information, and tubing type information.

46. (currently amended) The method of claim 43 wherein said configuration information includes ~~at least one of~~ frontal area information ~~and number of equivalent parallel refrigerant circuits information~~.

47. (previously presented) The method of claim 43 wherein said configuration information includes fin geometry information of said heat exchanger.

48. (previously presented) The method of claim 47 wherein said fin geometry information includes at least one of fin density information and fin type information.

49. (cancelled)

50. (currently amended) The method of claim 69 ~~49~~ wherein said configuration information includes tube geometry information of said heat exchanger.

51. (previously presented) The method of claim 50 wherein said tube geometry information includes at least one of: number of rows information, horizontal tube spacing information, vertical tube spacing information, number of return bends information, outside diameter of tubing information, inside diameter of tubing information, and tubing type information.

52. (currently amended) The method of claim 69 ~~49~~ wherein said configuration information includes at least one of frontal area information and number of equivalent parallel refrigerant circuits information.

53. (currently amended) The method of claim 69 ~~49~~ wherein said configuration information includes fin geometry information of said heat exchanger.

54. (previously presented) The method of claim 53 wherein said fin geometry information includes at least one of fin density information and fin type information.

55. (cancelled)

56. (currently amended) The method of claim 69 ~~49~~ wherein said configuration information includes a number of equivalent parallel refrigerant circuits information.

57. (new) A method comprising:

receiving condenser parameters, evaporator parameters and compressor parameters of a cooling system;

configuring a model of said cooling system according to said condenser parameters, said evaporator parameters and said compressor parameters;

generating at least one flow control device selection parameter with a computer simulation of said cooling system based on said configured model;

outputting at least one flow control device that corresponds to said at least one flow control device selection parameter generated by said computer simulation.

58. (new) The method of claim 57 wherein said generating said at least one flow control device selection parameter includes generating at least one of a refrigerant type

parameter, a percent bleed parameter, an evaporator temperature parameter, a condensing temperature parameter, a liquid temperature parameter, and an evaporator capacity parameter.

59. (new) The method of claim 57 wherein said generating said at least one flow control device selection parameter includes generating a refrigerant type parameter.

60. (new) The method of claim 57 wherein said generating said at least one flow control device selection parameter includes generating a percent bleed parameter.

61. (new) The method of claim 57 wherein said generating said at least one flow control device selection parameter includes generating an evaporator temperature parameter.

62. (new) The method of claim 57 wherein said generating said at least one flow control device selection parameter includes generating a condensing temperature parameter.

63. (new) The method of claim 57 wherein said generating said at least one flow control device selection parameter includes generating a liquid temperature parameter.

64. (new) The method of claim 57 wherein said generating said at least one flow control device selection parameter includes generating an evaporator capacity parameter.

65. (new) A method comprising:

receiving condenser parameters, evaporator parameters and compressor parameters for a cooling system;

receiving an dry bulb temperature;

receiving at least one first air property input including at least one of a wet bulb temperature, a relative humidity, a humidity ratio, a specific volume, an enthalpy, and a dew point temperature;

calculating at least one second air property input based on said dry bulb temperature and said at least one first air property input, said at least one second air property input including at least one of said wet bulb temperature, said relative humidity, said humidity ratio, said specific volume, said enthalpy, and said dew point temperature;

configuring a model of said cooling system according to said condenser parameters, said evaporator parameters, said compressor parameters, said at least one first air property input, and said at least one second air property input;

generating an output with a computer simulation of said cooling system based on said configured model.

66. (new) The method of claim 65 further comprising receiving an sea level, wherein said calculating includes calculating said at least one second air property input based on said sea level.

67. (new) The method of claim 65 further comprising calculating an air density, wherein said configuring includes configuring said model according to said air density.

68. (new) The method of claim 65 further comprising calculating a vapor pressure, wherein said configuring includes configuring said model according to said vapor pressure.

69. (new) The method of claim 65 further comprising calculating an absolute humidity, wherein said configuring includes configuring said model according to said absolute humidity.

70. (new) The method of claim 65 wherein at least one of said condenser parameters and said evaporator parameters includes configuration information for a heat exchanger of said cooling system.